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Publication No. 642-1

6M-5-67

The Control of
TARTARY BUCKWHEAT
In
ALBERTA

CA2 ALA 1967C57
Control of Tartary Buckwheat in Alberta
(Fagopyrum Tataricum) (Rev.Ed.). 1
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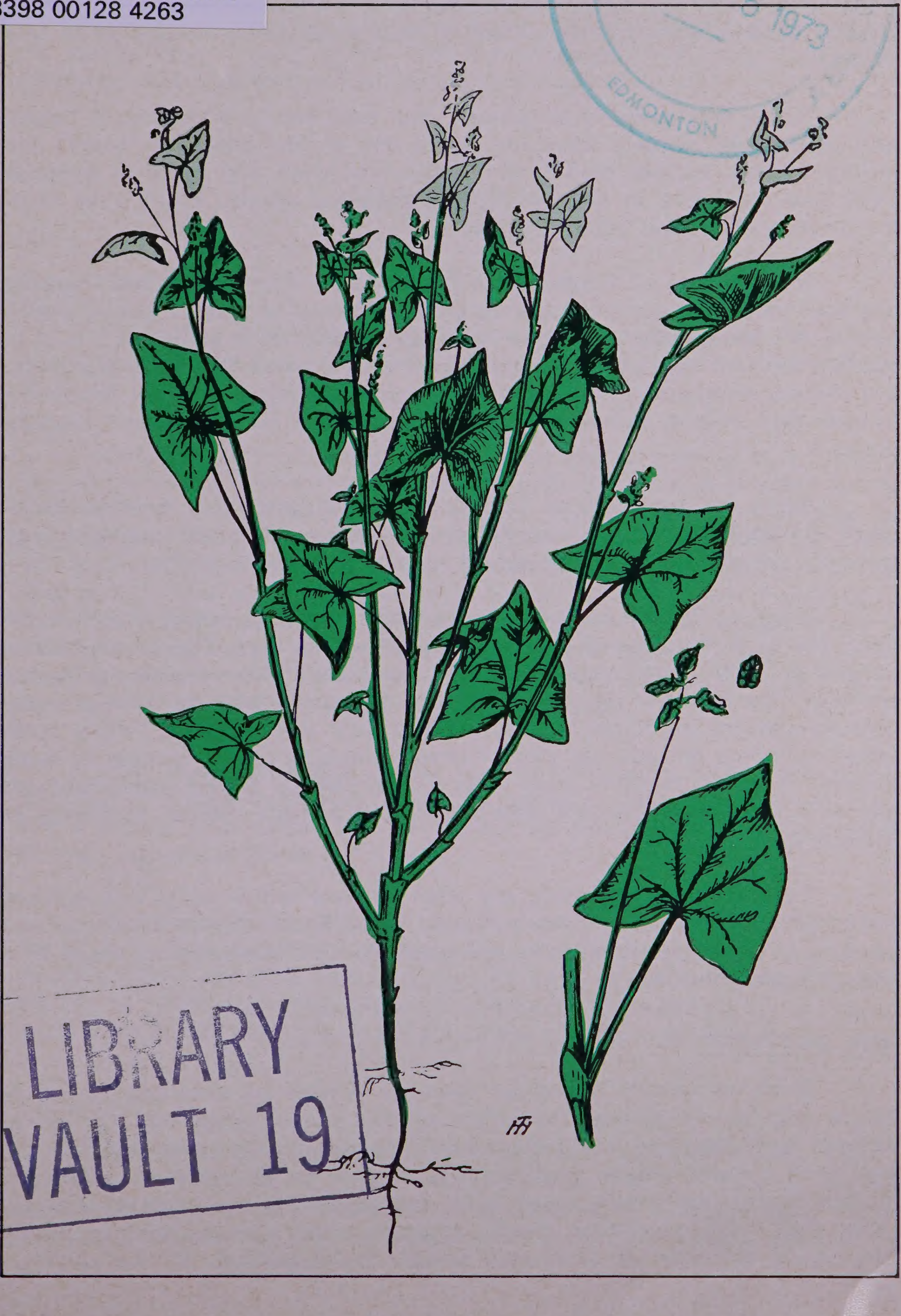

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THE CONTROL OF TARTARY BUCKWHEAT IN ALBERTA

(Fagopyrum tataricum)

Revised by

Dr. Wm. H. Vanden Born
University of Alberta

H. A. Friesen
Lacombe Experimental Farm

Tartary buckwheat is a Class B Noxious Weed under the Alberta Noxious Weeds Act. Under the Canada Seeds Act it is a Prohibited Noxious weed in Western Canada, and no grain containing Tartary buckwheat seeds may be sold as seed.

Tartary buckwheat is an annual weed from two to three feet in height, with light green, roughly triangular leaves one to four inches in length and usually slightly broader than long. Flowers are small and white or greenish white and are borne in bunches on the flowering shoots, which arise from the junction of the leaf stalks and stems.

The plant has an indeterminate growth habit, which means that flowering and seed production continue over an extended period of time. Flowering begins four to five weeks after emergence and may continue until stopped by frost in the fall. The first seeds begin to ripen three to four weeks after flowering starts, and ripening continues until frost. Tartary buckwheat plants are very susceptible to even light frost at all stages of growth, particularly during the early seedling stages.

Seeds are dull brownish or dark grey, rough and often wrinkled, three-sided and edged, particularly near the tip, and nearly 3/16 inch in length. They are very similar in size and weight to kernels of wheat or barley.

Seeds of Tartary buckwheat in commercial grades of wheat darken the flour, and in malting barley they adversely affect the malt. Top grades of oats containing Tartary buckwheat cannot be used for rolled or other processed products. The seeds of this weed are very difficult to separate from grain by ordinary cleaning processes, and as a result grain is degraded if Tartary buckwheat seeds are present, the drop in grade depending on the number of seeds present. If wheat contains more than 70 kernels of Tartary buckwheat per pound, it is graded "Rejected" and the price is reduced sharply, regardless of the quality of the wheat.

Tartary buckwheat plants are erect and are rather easily distinguished from wild buckwheat which has a twining habit. Seeds of wild buckwheat are ⅛ inch in size, 3-sided, smooth, and black, though sometimes enclosed in a brownish-grey covering.

Seed germination

Seeds of Tartary buckwheat must go through an after-ripening period before they will germinate. The length of this period varies, and soil of an infested field, therefore, will contain dormant seeds, seeds ready to germinate, and all in between stages. After-ripening of seeds on the plant or on the soil surface occurs most quickly under warm, dry conditions, and much more slowly under cool, moist conditions. Seeds buried in moist soil lose their dormancy very slowly, and may not do so until brought to the surface.

PREVENTION

Sow clean seed

Be careful about seed used, and be particularly cautious when buying it from one who has Tartary buckwheat on his farm. Spread seed grain on white paper and check it carefully. **Never** use seed containing Tartary buckwheat.

Check fields for presence of Tartary buckwheat

Check fields early in the year, not only for Tartary buckwheat plants but for other weeds too. Buckwheat usually shows up well against the short crop in the spring. Hand pulling of the first few scattered plants may well prevent infestation and thus save endless trouble in the future.

CONTROL

Cultural methods

Cultivation should be aimed at eradication of buckwheat seedlings or plants or at covering up after-ripened seed in preparation for destruction of seedlings by further cultivation.

Tartary buckwheat seeds will not germinate as soon as they are shed but will germinate readily if allowed to after-ripen by exposure to warm and dry weather for 4 to 5 weeks. If warm and dry weather following harvesting has permitted this rapid after-ripening to take place, covering the seeds by shallow fall tillage will encourage them to germinate. Resulting seedlings will be destroyed by frost. If, on the other hand, weather conditions after harvesting are cold and wet, the seeds will not after-ripen properly, and tillage should be postponed until spring to avoid burying dormant seeds. Tartary buckwheat seeds germinate best if covered with a shallow layer of soil. Therefore, do not bury after-ripened seeds more than three inches deep.

Late seeding of barley (about June 10) will allow time to kill at least one crop of Tartary buckwheat before the barley is planted. Proper fertilization and a heavier than normal rate of seeding will help result in the smothering of many buckwheat plants.

Post-seeding cultivation with a rod or cable weeder when barley sprouts are ¼ to ½ inch long is a useful practice provided the grain has been seeded deeply enough (approx. 3 inches) to prevent injury to the sprouts, and provided buckwheat germination has advanced sufficiently at seeding time to make a good kill possible. Timing is important in this type of operation.

Forage crops

As mentioned earlier, seeds of Tartary buckwheat will remain viable in the soil for several years. Forage crops, particularly if cut for hay, will thin down buckwheat infestations but cannot be expected to eradicate them. Cutting must be done before any buckwheat seed is formed. Usually at least two cuttings will be necessary.

Chemical control

Dicamba

Good to excellent control can be obtained in crops of wheat and oats by treatment with 2 ounces per acre of dicamba in appropriate mixtures. Such mixtures usually will contain 2,4-D or MCPA amine in addition to dicamba, and may also contain some mecoprop. Banvel '3' and Kil-Mor (trade names) are examples of such mixtures. The presence of 2, 4-D or MCPA in the mixture, in addition to dicamba, is advantageous in situations where other broadleaved weeds occur that are relatively resistant to dicamba (e.g. mustards, hemp nettle).

Treatments are most effective when the weeds are in an early stage of growth. If the weed population warrants spraying as early as the 2-leaf stage of crop plants, or if hemp nettle is one of the weeds present, mixtures containing MCPA (if available) are preferable to those containing 2,4-D, since application of the latter may result in serious deformities in the crop plants.

Spraying should be done during the 2- to 4-leaf stage of the crop plants. If it is delayed until after this stage, serious crop injury and possible reduction in yield may result.

Barley is considerably more susceptible to dicamba than is wheat or oats. Dicamba dosages in mixtures applied to Tartary buckwheat growing in barley should not exceed 1.5 ounces per acre, as in 6 ounces per acre of Banvel '3', to avoid serious crop injury.

Bromoxynil

Bromoxynil octanoate (trade names Buctril C or Brominil) at 4 to 6 ounces per acre will result in nearly complete control if applied during the 1- to 4-leaf stage of the weed. The effectiveness of later applications will depend at least partly on prevailing growing conditions. There is some evidence that poor growing conditions may increase the effectiveness of this herbicide. Wheat, oats and barley will tolerate up to 8 ounces per acre of bromoxynil from the 2-leaf stage on.

Bromoxynil may be mixed with 2,4-D or MCPA. Such additions are useful mainly to control additional weed species that are somewhat tolerant to bromoxynil. They may also improve the effectiveness of the bromoxynil treatment when applied at later stages of growth (more than four or five leaves) of Tartary buckwheat. A 1:1 mixture of bromoxynil and MCPA is sold under the trade names Buctril M and Brominil M.

2,4-D or MCPA

The application of 2,4-D ester (preferably low-volatile) at 6 to 8 ounces per acre or MCPA ester at 10 to 12 ounces per acre as soon as crop growth permits usually will result in a reasonable measure of control or suppression. Treatments will be most effective if applied at an early growth stage of the weed, preferably not later than the first or second true-leaf stage. The treatments recommended will reduce but not completely prevent seed setting of the buckwheat.

Preparation assisted by
WEED CONTROL BRANCH

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Printed by L. S. Wall, Queen's Printer for Alberta, 1967